



UNIVERSITY OF RUHUNA – FACULTY OF MEDICINE
ALLIED HEALTH SCIENCES DEGREE PROGRAMME
THIRD BPHARM PART I EXAMINATION - JANUARY 2017
PH 3125 PHARMACOGNOSY II (SEQ)

TIME: THREE HOURS

INSTRUCTIONS

- Answer **all** questions in the books given.
- No paper should be removed from the examination hall.
- Do not use any correction fluid.
- Use illustrations where necessary.

1.

- 1.1 List different components in a plant tissue culture medium and give importance of each component. **(20 marks)**
- 1.2 Giving examples, list different types of sterilization methods used in plant tissue culture. **(30 marks)**
- 1.3 Name three **(03)** heat liable chemicals used in tissue culture. Mention how these chemicals are sterilized. **(10 marks)**
- 1.4 Describe the steps involved in plant tissue culture for obtaining a plant. **(20 marks)**
- 1.5
- 1.5.1 What is somatic hybridization? **(10 marks)**
- 1.5.2 What is the main advantage of somatic hybridization? **(10 marks)**

2.

- 2.1 Indicate one **(01)** source and one **(01)** pharmaceutical use of each of the following enzymes. **(40 marks)**
- 2.1.1 Chymotrypsin
- 2.1.2 Collagenase
- 2.1.3 Fibrinolysin
- 2.1.4 Hyaluronidase
- 2.1.5 Pancrealipase
- 2.2 Justify your answers on the followings:
- 2.2.1 Consumption of fresh pineapple is better than that of cooked / processed pineapple. **(10 marks)**
- 2.2.2 Eating pineapple can reduce your weight. **(10 marks)**
- 2.3
- 2.3.1 Briefly discuss the types of allergens with one **(01)** example for each. **(30 marks)**
- 2.3.2 List two **(02)** compounds released by the body in response to a contact with an allergen. **(10 marks)**

3.

3.1 List the major insecticidal compound available in the following natural sources.

(25 marks)

3.1.1 *Chrysanthemum cinerariifolium*3.1.2 *Derris* sp.3.1.3 *Azadirachta indica*3.1.4 *Ryania speciosa*3.1.5 *Saccharopolyspora spinosa*

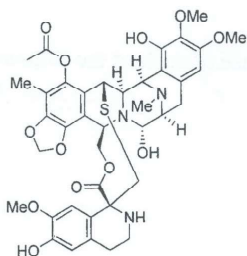
3.2 Name the poisonous chemical compounds and toxic parts of the following plants available in Sri Lanka.

(25 marks)

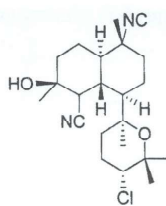
3.2.1 *Thevetia peruviana*3.2.3 *Strychnos nux-vomica*3.2.3 *Gloriosa superba*3.2.4 *Abrus precatorius*3.2.5 *Jatropha curcas*

3.3 A number of newer and potent drug molecules are derived from marine organisms and some of them are in the market or later stages of clinical trials. Following structures represents few of them. Identify the molecules and state the activity of each molecule.

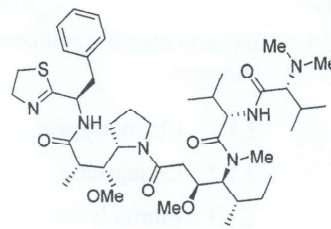
(25 marks)



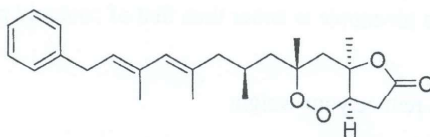
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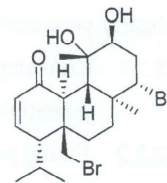
B



C



D



E

3.4 Giving examples, briefly discuss the involvement of plants in the development of antineoplastic agents.

(25 marks)

- 4.
- 4.1 Define the term 'biological products'. (05 marks)
- 4.2 Briefly explain challenges encounter from the manufacturing process to drug administration of biological products. (15 marks)
- 4.3 What is an immune assay? (10 marks)
- 4.4 Briefly define 'an immune modulator'. (10 marks)
- 4.5 Briefly explain genetic approaches available for vaccine production. (20 marks)
- 4.6 Explain the industrial production of penicillin. (40 marks)
- 5.
- 5.1
- 5.1.1 Briefly explain the followings with respect to garlic bulb. (10 marks)
- a) one medicinal use
- b) mechanism of action
- 5.1.2 Explain the process of development of new drugs from the plant sources. (40 marks)
- 5.2 Briefly discuss the following. (20 marks)
- 5.2.1 *Ex-situ* conservation of medicinal plants
- 5.2.2 *In -vitro* conservation of medicinal plants
- 5.3 What factors have to be considered when incorporating traditional medicine into national health system? (15 marks)
- 5.4 What are the economic importances of medicinal plants? (15 marks)
- 6.
- 6.1 Briefly describe the term quality control of a herbal drug. (10 marks)
- 6.2 List main chemical parameters of standardization and quality assurance of a raw herbal drug. (10 marks)
- 6.3 List four (04) types of toxicity studies should be concerned in preclinical stage on herbal drug development. (10 marks)
- 6.4 Briefly describe the main components of a study protocol for clinical trials in herbal products. (20 marks)
- 6.5 Describe the associated problems of herbal/Ayurveda medicine in Sri Lanka. (10 marks)
- 6.6 Write the process of proper identification of medicinal plants. (15 marks)
- 6.7 Write the main methods for the standardization of herbal drugs in the commercial market. (10 marks)
- 6.8 Write the different ways of industrial utilization of medicinal plants. (15 marks)

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